

## CLAIMS

What is claimed is:

1. An electrical connection system, the system comprising:  
a first electrical connector with a first housing;  
5 a second electrical connector with a second housing, the second housing having one of a projection and a projection opening along one surface;  
a plate connected to the first housing, the plate having the other one of the projection and the projection opening, when the first housing is  
10 connected to the second housing to couple the first electrical connector to the second electrical connector the projection is detachably engaged with the projection opening to detachably lock the first electrical connector to the second electrical connector.
- 15 2. The system as set forth in claim 1 wherein the second electrical connector and the plate have two or more of the projection and the projection opening used to lock the second electrical connector to the first electrical connector.
- 20 3. The system as set forth in claim 1 wherein the plate has a neutral position where the projection is seated in the projection opening and a release position where the projection is withdrawn from the projection opening to unlock the second electrical connector from the first electrical connector.
- 25 4. The system as set forth in claim 1 wherein the plate comprises:  
a first section connected to the first electrical connector, a spring in the plate;  
a second section having the other one of the projection and the  
30 projection opening; and  
a biasing element connected between the first and second sections.

5. The system as set forth in claim 4 wherein the second section has a neutral position where the projection is seated in the projection opening and a release position where the projection is withdrawn from the projection opening to unlock the second electrical connector from the first electrical connector.

6. The system as set forth in claim 1 wherein the first electrical connector is one of a male electrical connector and a female electrical connector and the second electrical connector is the other one of the male electrical connector and the female electrical connector.

7. A method of making an electrical connection system, the method comprising:  
providing a first electrical connector with a first housing;  
providing a second electrical connector with a second housing, the second housing having one of a projection and a projection opening along one surface;  
connecting a plate to the first housing, the plate having the other one of the projection and the projection opening, when the first housing is connected to the second housing to couple the first electrical connector to the second electrical connector the projection is detachably engaged with the projection opening to detachably lock the first electrical connector to the second electrical connector.

8. The method as set forth in claim 7 wherein the second electrical connector and the plate have two or more of the projection and the projection opening used to lock the second electrical connector to the first electrical connector.

9. The method as set forth in claim 7 wherein the plate has a neutral position where the projection is seated in the projection opening and a release position where the projection is withdrawn from the projection opening to unlock the second electrical connector from the first electrical connector.

10. The method as set forth in claim 7 wherein the plate comprises:

- 5 the plate;
- a first section connected to the first electrical connector, a spring in
  - a second section having the other one of the projection and the projection opening; and
  - a biasing element connected between the first and second sections.

10 11. The method as set forth in claim 10 wherein the second section has a neutral position where the projection is seated in the projection opening and a release position where the projection is withdrawn from the projection opening to unlock the second electrical connector from the first electrical connector.

15 12. The method as set forth in claim 1 wherein the first electrical connector is one of a male electrical connector and a female electrical connector and the second electrical connector is the other one of the male electrical connector and the female electrical connector.

20 13. A method for securing electrical connectors, the method comprising:

- coupling a first electrical connector which is connected to a plate to a second electrical connector;
- 25 aligning at least one projection on one of the second electrical connector and a plate with a projection opening in the other one of the second electrical connector and the plate; and
- locking the second electrical connector to the first electrical connector with the engagement of the projection with the projection opening.

30 14. The method as set forth in claim 13 further comprising pivoting the plate from a neutral position where the projection is seated in the projection opening to a release position where the projection is withdrawn from

the projection opening to unlock the second electrical connector from the first electrical connector.

15. The method as set forth in claim 13 wherein the plate  
5 comprises:  
a first section connected to the first electrical connector, a spring in  
the plate;  
a second section having the other one of the projection and the  
projection opening; and  
10 a biasing element connected between the first and second sections.

16. The method as set forth in claim 15 wherein the second  
section has a neutral position where the projection is seated in the projection  
opening and a release position where the projection is withdrawn from the  
15 projection opening to unlock the second electrical connector from the first  
electrical connector.